

Titanium Alloy TiAl6V4



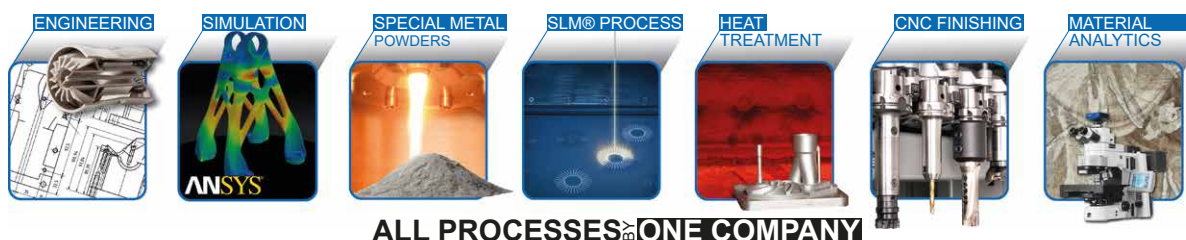
Metal Alloys for Additive Manufacturing

ALTERNATIVE NAMES:

3.7165
ASTM B348
Titan Grade 23
Titan Grade 5 ELI

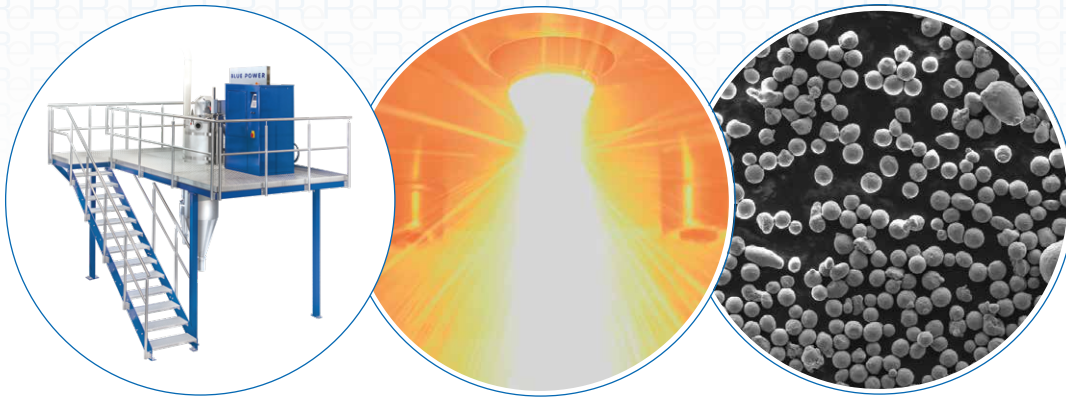
Properties	Unit	As built ¹⁾	Heat-treated ²⁾
Tensile Strength R_m	MPa	1280 ±20	960 ±20
Yield Strength $R_{p0,2}$	MPa	1110 ±20	875 ±20
Elongation at Break A_5	%	9 ±1	14 ±1
Young's Modulus E	GPa	115 ±5	125 ±5
Charpy Notch Toughness A_v	J	12 ±2	30 ±2
Hardness	HV	365 ±5	305 ±5

Rosswag Engineering offers a holistic and fully integrated process chain for Additive Manufacturing services. Our portfolio ranges from manufacturing of your prototypes, tools and small serial products to an individual consulting and engineering process for the choice of material, parameters and process chain.



ALL PROCESSES  ONE COMPANY





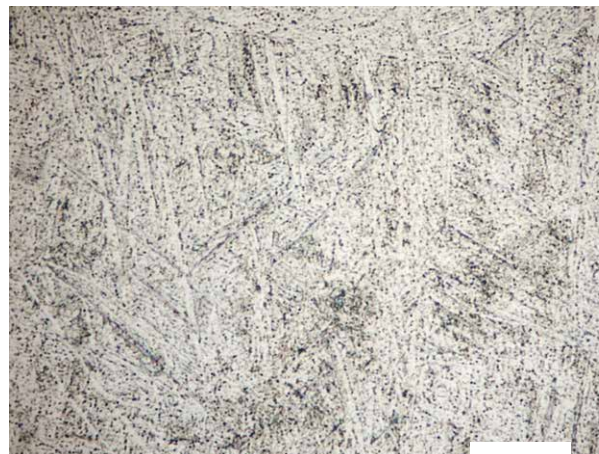
Material characteristics

TiAl6V4 is one of the most commonly used titanium alloys and it is characterized by a high specific strength and an excellent corrosion resistance. In combination with its good weldability, Titan Grade 23 is frequently used in the aerospace and automotive industry, as well as in medical applications due to its high biocompatibility. This titanium alloy offers a wide range of possibilities for additively manufactured lightweight components.

CHEMICAL COMPOSITION

Element	Mass Fraction [%]
Al	5.5 - 6.75
V	3.5 - 4.5
Fe	≤ 0.30
O	≤ 0.20
C	≤ 0.08
N	≤ 0.50
H	≤ 0.015
Other	≤ 0.40
Ti	Balance

MICROSECTION



10µm

- 1) The specified material properties were determined at room temperature. They are multi-dimensionally dependent on many different machine and process parameters. Without further investigation, the material properties do not constitute a sufficient basis for component dimensioning.
- 2) Specific heat treatment processes lead to optimized mechanical-technological properties to meet the component requirements.